Weightbearing After Distal Femur Fractures: Does the Surgeon's Postoperative Protocol Matter?

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INTRODUCTION: Optimal postoperative weightbearing protocol after surgical fixation of distal femur fractures remains controversial, with limited evidence to guide surgeons' decision-making, potentially impacting patient outcomes. We sought to determine the factors that increase the risk for complications in OTA 33A/C fractures, hypothesizing that postoperatively assigned weightbearing would not be associated with adverse outcomes.

METHODS: A retrospective cohort study was conducted on 137 patients (>18 years old) with surgically treated OTA 33 distal femur fractures from 2018-2022 at a level 1 trauma center with a minimum 6-month follow-up. Patients were categorized based on surgeons' postoperative protocols: weightbearing-as-tolerated (WBAT) (n=38) or restricted weightbearing (RWB) (n=99). Demographics, injury and surgery characteristics, union rates, alignment, complications, and assistive device use were compared. Multivariable logistic regression analyzed the association of weightbearing protocol with complications, adjusting for key variables.

RESULTS: The WBAT group was older (60.5 vs 55), predominantly female (76% vs 47%), and had more low-energy injuries (79% vs 36%) than the RWB group. WBAT patients had faster time to union (mRUST > 10) (209.5 vs 365 days) and higher union rates by 6 months (16% vs 4%). Changes in coronal (median 1° vs 2°) and sagittal alignment (median 2° vs 1°) were similar between groups, as was assistive device use at final follow-up (45% vs 35%). Multivariable analysis revealed closed fracture status as the only significant predictor of lower complication odds (OR 0.436, 95% CI 0.194-0.980). Weightbearing protocol, OTA classification, injury energy, age, and sex were not significant predictors of complications.

DISCUSSION AND CONCLUSION: Closed fracture was the sole independent predictor of lower complication risk, suggesting soft tissue injury, rather than weightbearing protocol, may primarily drive adverse outcomes. Larger, prospective studies would clarify the impact of postoperative weightbearing protocols on patient outcomes and inform evidence-based decision-making.